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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WARE, DEBORAH K	

ART UNIT	PAPER NUMBER
1651	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/836,497	SOFER, SAMIR S.	
	Examiner	Art Unit	
	Deborah K. Ware	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claims 1-19 are presented for examination on the merits.

The instant case is a continuation-in-part (CIP) of case serial No. 09/293,126 filed April 16, 1999, now abandoned, and PCT/US97/18749, filed October 22, 1997. Applicant is requested to update the status of the instant case at page 1, line 1, of the instantly filed specification.

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract herein submitted by applicant presents incoherent sentence structure and is grammatically incorrect and consists of run-on sentences. For example, it is suggested that

Applicant insert --at-- before the last occurrence "the" at line 8 and before "its" at line 9 and further at line 9, insert --,-- after "particles".

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 is rendered vague and indefinite for the recitation of "the preparation" at line 1, wherein the term may be construed as lacking antecedent basis in the claim. It is unnecessary to refer to a process for preparation as "the preparation" since it has not taken place yet, thus, reserving the usage of "the preparation" for subsequent uses throughout the claims. It is suggested, thus, to delete "the" before "preparation". Also the phrase in step a) recited as "having a least one surface" is vague and indefinite as to what is intended whether one surface or more than one surface. Thus, this may be a typo but this is unclear, thus, the phrase does render the claim vague and indefinite. Therefore, it is suggested to change "a" before "least one" to --at-- in step a) of claim 1. Also in step b) the recitation of "their passage" is unclear as to what exacted is intended and thus, it is suggested to delete that recitation and replace with --passage of said reactant particles--. Also it is suggested to insert --therein at-- before "the beginning" at line 3 of

step b) in order to clarify wherein an energy potential difference is generated between what two points. Also the insertion of --at-- before "its end" at line 4 of step b) is suggested. Further, insertion of a --,-- after "its end" is suggested to clarify the transition of the reactant particles once they become polarized. Furthermore, the phrase "whereby polarized particles" does not have clear antecedent basis in the claim and it is suggested to insert --the-- between "whereby" and "polarized particle" for purposes of identifying that only fed-in reactant particles are being polarized and no other particles that may be in the system.

5. Claim 2 is rendered vague and indefinite at line 2 for the recitation of "the surface or portions of the surface" because the phrase lacks antecedent basis in the claim. It is suggested to change the phrase to --at least one surface--.

6. Claim 4 is rendered vague and indefinite for the recitation of "until reactant particles" at line 2. Thus, it is suggested to insert --said-- before "reactant particles". Also "the surface" further lacks antecedent basis at line 2 and it's suggested to change to --the at least one surface--.

7. Claim 5 is rendered vague and indefinite for the recitation of "the reactant" at line 1 since the term lacks antecedent basis. It is suggested to change to --the reactant particles--. However, it is inconsistent that the process may be carried out with either "reactant" or "reactant particles" if that is the case because the specification does appear to support "reactant" when selected to be "a biocatalyst" as being "reactant particles" per se. Is this what is intended? Perhaps "the reactant" and "the reactant particles" are intended to be different but this is unclear in the claims. Furthermore, the term "the reactant" recited in claims 1-14 lack antecedent basis for same reasons

discussed above for claim 5. Also claims 11-14 are further unclear for the reasons discussed above for claim 5. It is uncertain that "activated sludge" is intended to be a biocatalyst per se, or can be particles, per se as intended within the meaning of the claim. Are "the reactant" and "the reactant particles" intended to be the same within the meaning of the claimed process. Are they both intended to be immobilized within the bioreactor? Are they both different and intended to be polarized particles? Can a biocatalyst or activated sludge be polarized particles? These are questions that the claims raise and it is uncertain that the language used in the claims at present is distinctly and clearly setting forth the intended claimed subject matter. Amendments and/or clarification providing support in the specification at page number and line number are requested for response to the above rejections.

8. Furthermore, claim 17 is rendered vague and indefinite for the recitation of "one or more components" . The metes and bounds of the claim can not be determined.

9. Claim 18 is further rendered vague and indefinite for recitation of "The method" which appears to lack antecedent basis. It is suggested to recite --A method--. Also "a bioreactor" lacks antecedent basis at line 2, and it's suggested to change to --the bioreactor--. Further, claim 19 is rendered vague and indefinite for the recitation of "phenolic components" at line 2 which lacks antecedent basis. basis.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makovec et al. (US Patent No. 5,237,115) in view of Harder et al. (US Patent No. 5,405,764) and Lowther (US Patent No. 4,178,239).

12. Claims are drawn to a process of preparation for a potential energy field reactor and reactor, therefrom, for processing a feedstock with a reactant comprising a flow pathway having at least one surface, feeding the reactant to the pathway to generate an energy potential difference in such a manner to polarize the reactant particles and thus, immobilizing them in the pathway. Also methods for processing components of a feed stock by feeding the stock into the reactor and method of removing phenols from feedstock by also feeding stock into a reactor are claimed.

Makovec et al. teach a process of preparing a reactor and reactor, therefore, for processing a feedstock with a reactant comprising a bioreactor having at least one surface and a flow pathway in the reactor, and feeding the reactant through the pathway to catalyze a reaction. Note figures 1-2 and column 1, lines 5-10, and column 5, lines 5-30 and column 6, lines 25-45. Also note column 7, lines 1-55.

Harder et al. teach immobilized biocatalyst in particulate form of desired sizes of living cells, which includes bacteria and yeast (column 3, lines 60-65) and furthermore their use in reactors, note column 2, lines 55-60.

Lowther teaches removing organic impurities via biological action in a reactor wherein biological action is facilitated by a spiral flow pattern generated by air within the reactor via

biological aeration generated by activated sludge, aerobic microorganisms (see column 2, all lines, column 5, lines 65-70 and column 6, line 1-5), etc. The aeration provides for mixing in the bioreactor.

The claims differ from Makovec in that an energy potential difference between the beginning of the flow pathway and its end, whereby the reactant becomes polarized particles which adhere to each other is not specifically disclosed.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to replace the catalysts of Makovec et al. with the catalysts disclosed by Harder and Lowther. Lowther clearly disclose a spiral flow pattern which aids mixing and biological action. The spiral flow pattern of Lowther describes how mixing and biological action contributes to the removal of impurities from the reactor. Note column 6, all lines The mixing generated within the spiral flow pattern would have been expected to provide for a potential energy reactor for processing a reagent in a feedstock and further one of skill would have expected an energy potential difference being generated between the beginning of the flow pathway and at its end. One of skill in the art would have expected biocatalyst to provide for successful results in a spiral flow pathway of a reactor as the combined cited prior art references clearly teach the same. Each of the process steps are disclosed and suggested and the combined steps would have been expected to provide for the desired adherence between the particles. The particles whether immobilized in the reactor or provided to such reactor would have been expected to provide successful results.

The surface(s) would have been expected to be coated layer upon layer with the particles as they spiraled through the reactor. The feedstock is clearly disclosed to be aqueous and suggested to also be non-aqueous since Makovec clearly teach fuel processing which may or not contain water. The energy reactor is clearly suggested by the cited prior art. Also processing of components of a feedstock is clearly disclosed by Makovec et al. wherein fuel components are being processed. Also the removal of impurities which suggest the removal of phenol components is taught by Lowther. To screen for particulate size using a mesh of less than 300 microns and perform detection phenol tests on recycled feedstock is clearly within the purview of an ordinary artisan. The claims are prima facie obvious over the cited prior art.

All claims fail to be patentably distinguishable over the state of the art discussed above and cited on the enclosed PTO-892 and/or PTO-1449. Therefore, the claims are properly rejected.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah K. Ware whose telephone number is (703) 308-4245. The examiner can normally be reached on Mondays to Fridays from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn, can be reached on (703) 308-4743. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3592.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

DEBORAH K WARE
PATENT EXAMINER

Deborah K. Ware

Art Unit 1651

September 24, 2003